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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Yasuhiro Okubo

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EXAMINER

SHENG, TOM V

ART UNIT

PAPER NUMBER

2629

DATE MAILED: 10/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/743,541

Applicant(s)

OKUBO ET AL.

Examiner

Tom V. Sheng

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 June 2004 and 23 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 8-20 is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 June 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 6/4/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION***Double Patenting***

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. Claims 1-6 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 6, 28, 29 and 30 of U.S. Patent No. 6,969,183 B2. Although the conflicting claims are not identical, they are not patentably distinct from each other because the optical engine, reflection type digital light deflector, light irradiation unit of claim 1 of the 183' patent and the information display unit of claim 28 of the 183' patent correspond to the optical engine, reflection type digital light deflector, light irradiation unit and information display unit of claim 1 of the application.

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Also, the information acquisition device and the information display unit of claim 29 of the 183' patent correspond to the information acquisition device and the information display unit of claim 2 of the application.

Accordingly, the global positioning system of claim 6 of the 183' patent, that outputs a position information signal, corresponds to claimed information acquisition unit is a global positioning system that outputs a position information signal, cited in claim 3 of the application.

Similarly, the display range of within 17 meters as cited in claim 30 of the 183' patent corresponds to claimed information displayed within about 17 meters ahead in a direction of traveling of the vehicle, cited in claim 4 of the application.

As for claims 5 and 6 of the application, the 183' patent does not claim any limitations of displaying information either within 14 meters or between 4 meters to 17 meters ahead of the vehicle. On the other hand, these are obviously experimentally determined ranges that would provide optimal viewing under certain environments, just as the way the limitation of within 17 meters, in claim 4 of the application, is determined.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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4. Claims 1 and 2 are rejected under 35 U.S.C. 102(b) as being anticipated by Hege (US Patent No. 5,938,319).

As for claim 1, Hege teaches a digital display apparatus for a vehicle (vehicle headlight; fig. 1), comprising:

an optical engine including a light source (light source 10; column 3, lines 1-9);

a reflection type digital light deflector (light guiding device 18; column 3, lines 9-16) that has a plurality of micro mirror elements (reflecting elements 22; fig. 1, 2a and 2b) arranged to be respectively tiltable, that digitally switches a tilt angle of each of the micro mirror elements between a first tilt angle and a second tilt angle to switch a reflection direction of a light from the optical engine between a first reflection direction as an ON state and a second reflection direction as an OFF state (each reflecting element 22 is tiltable between two definite positions; column 3, lines 28-40);

a light irradiation unit (lens 20) that irradiates an ON state light reflected from the reflection type digital light deflector on a road surface (forms a light beam illuminating the traffic conditions in front of the vehicle; column 3, lines 16-24); and

an information display unit (controller 30) that controls the reflection type digital light deflector (controls the adjusting elements 26/28 of the reflecting elements 22; column 4, lines 1-5), and that displays information using a contrast between the ON state light and an OFF state light reflected from the reflection type digital light deflector on the road surface via the light irradiation unit (variable characteristics can be produced by switching individual reflecting elements 22 between their two positions to

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modify the light beam from light source 10; column 4, lines 6-27). The variable light beam characteristics correspond to "displays information" as claimed.

As for claim 2, Hege teaches a detecting device provided that detects different parameters and the switching of the reflecting elements 22 occurs according to these parameters (column 6, lines 19-22). Specifically, the weather conditions can be measured by this device and the light beam characteristic is changed accordingly (column 6, lines 27-31). Thus, Hege's detecting device corresponds to claimed information acquisition unit.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 3-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hege.

As for claim 3, Hege teaches detecting different parameters such as the speed of the vehicle, the weather conditions and the light conditions in front of the vehicle, in order to control the reflecting elements 22. However, Hege does not teach detecting the position of the vehicle by means of a global positioning system.

On the other hand, the Applicant(s) has not disclosed that the position information solves any stated problem, provides a specific advantage or shows any

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particular purpose for using it. Further, at the time of Hege's invention was made, it would have been obvious for one of ordinary skill in the art to include position information, since position could affect the amount or pattern of light beam needed for optimal viewing by a driver. Therefore, it would have been obvious to incorporate a global positioning system as the information acquisition unit, because position information provided could result in a light beam for optimal viewing.

As for claims 4-6, the length of the light beam would obviously depend on conditions such as vehicle speed and weather conditions. The claimed conditions would best be provided under heavy fog or mist condition with the vehicle driving slowly.

7. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hege as applied to claim 1 above, and further in view of Kudo (JP 60022541 A).

As for claim 7, the information displayed by Hege's headlight is a light beam with different characteristics. Hege does not teach that the information includes graphic, symbol, letter, number, leveling mark, or a mark indicating the width of the vehicle.

Kudo teaches a headlight with lens 6 and lamp 9 (fig. 1-3). At the lower wall part 7 of the lens 6, a character plate is installed onto opening 2a. The light of the lamp 9 is projected on the road immediately before front wheels through the lens 8, character plate 10 and the openings 2a and 2b. See Abstract and Constitution. In particular, the character image controlled by the character plate 10 can be vehicle speed, fuel quantity, time or temperature.

One of ordinary skill in the art would recognize from Kudo's teaching that Hege's reflecting elements 22 could further be modified for the display of character image on the road. This is straightforward and cost effective since Kudo's reflecting elements 22 are already individually controllable and thus forming character in a part of the light beam via the reflecting elements are workable and further saving the need of a character plate and corresponding setup within the headlight.

Therefore, it would have been obvious to incorporate Kudo's teaching of character display by modifying Hege's controller 30 so that some reflecting elements can be used for displaying at least character information on the road, because being able to provide information such as vehicle speed or fuel quantity for on the road viewing is convenient and safe.

Allowable Subject Matter

8. Claims 8-20 are allowed.
9. The following is a statement of reasons for the indication of allowable subject matter:

None of the prior arts of record teaches the limitations,

"one of the two reflection digital light deflectors forms the information with the OFF state light under control of the information display unit, other of the two reflection digital light deflectors forms a non-lighting portion with the OFF state light under control of the information display unit, and the information display unit displays the information and the non-lighting portion on the road surface via the light irradiation units so that the

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non-lighting portion surrounds the information” of claim 8 and

“calculating a polygon that is a shape of information to be displayed; outputting the polygon to one of the reflection type digital light deflectors as a first control signal; calculating a first rectangle that surrounds the polygon; calculating a second rectangle that surrounds the first rectangle; outputting the second rectangle to other of the reflection type digital light deflectors as a second control signal; and displaying information that is formed by the one of the reflection type digital light deflectors based on the first control signal and a non-lighting portion formed by the other of the reflection type digital light deflectors based on the second control signal on a road surface so that the non-lighting portion surrounds the information” of claim 15.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tom V. Sheng whose telephone number is (571) 272-7684. The examiner can normally be reached on 9:00am - 6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amr Awad can be reached on (571) 272-7764. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Tom Sheng
September 21, 2006

AMR A. AWAD
SUPERVISORY PATENT EXAMINER

A handwritten signature in black ink, appearing to read "Amr A. Awad", with a large, sweeping flourish at the end.